

REMARKS

[0010] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. The status of the claims is as follows:

- Claims 1-2, 4, 9, 11-14, 25-28, 31, 33 and 35-40 are currently pending;
- Claim 10 is canceled herein;
- Claims 15, 17-20 and 24 are withdrawn herein;
- Claims 1-2, 4, 9, 11, 13, 25-26, 31 and 33 are amended herein; and
- New claims 39-40 are added herein.

[0011] Support for the amendments to claims 1-2, 4, 9, 11, 25-26, 31 and 33 is found in figures 2-4 and in the specification at least at paragraphs 30, 31, 39-43, 57 and 71-73.

[0012] Newly added claims 39 and 40 are allowable at least for being dependent from an allowable base claim. In addition, each of these claims recite features which have not been previously been considered by the Office and recite features which are not taught or suggested by McCanne.

[0013] In particular, claim 39 recites that the method further comprises "sending the routing policy message to other routing nodes in the overlay network" where the sending occurs "after returning the routing policy message to the sending node." Applicant respectfully asserts that McCanne fails to teach "sending" a "routing policy message" to a "sending node" and that McCanne fails to teach or suggest sending such a message "to other routing nodes" in the network as recited in this claim and "**after returning the routing policy message to the sending node**" (emphasis added).

[0014] As to claim 40, Applicant respectfully asserts that McCanne wholly fails to teach or suggest "combining" of policies or anything similar or equivalent. McCanne especially does not teach or suggest combining policies to form a "master routing policy" for nodes in an overlay network. Accordingly, Applicant respectfully asserts claim 40 is additionally allowable on this basis.

Claims 1, 15, 20, and 25 Comply With § 112 2nd Paragraph

[0015] Claims 1, 15, 20, and 25 stand rejected under 35 U.S.C. § 112, Second Paragraph, as allegedly being indefinite. Applicant respectfully traverses this rejection.

[0016] Nevertheless, for the sole purpose of expediting prosecution and without acquiescing in the propriety of the Office's rejections, Applicant herein amends claims 1 and 25 and withdraws claims 15 and 20 as shown above. Applicant respectfully submits that the amendments and withdrawals render the § 112, Second Paragraph, rejections moot.

Cited Document

[0017] McCanne: McCanne, U.S. Patent Application Publication No. 2004/0010616 has been applied to reject one or more claims of the Application.

Claim Features Should be Considered Together and in Combination with One Another.

[0018] The Applicant reminds the Office that "USPTO personnel must always remember to use the perspective of one of ordinary skill in the art . . . Claims and disclosures are not to be evaluated in a vacuum." MPEP § 2106.II.C. Further, the MPEP also states that "when evaluating the scope of a claim, every limitation in the claim must be considered. USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered." MPEP § 2106.II.C. and see *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981).

Claims 1, 9-11, 13, 20, 25, 31, and 37 Are Non-Obvious Over McCanne.

[0019] Claims 1, 9-11, 13, 20, 25, 31, and 37 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over McCanne. Applicant notes that claims 1-2, 4, 9-14, 25-28, 31, 33 and 35-40 are currently pending and that claims 1-2, 4, 9, 11-15, 17-20, 24-28, 31, 33 and 35-38 were previously pending before the Office. In any event, Applicant respectfully traverses the rejection of all pending claims.

Amended Independent Claim 1

[0020] Claim 1 recites, in part, the following features (with emphasis added), which are not taught or suggested by McCanne:

"generating by the routing node a routing policy message, the **routing policy message including a routing policy**, wherein the routing policy comprises instructions for routing nodes for redirecting messages . . .

"sending the routing policy message to the sending node;

identifying by the sending node a final destination address to which to route the message . . . ; and

"after identifying the final destination, incorporating by the sending node the routing policy into the body of the message; and

"forwarding by the sending node the message to the final destination node in the overlay network based on the instructions."

[0021] The Office states the following in regard to "sending the routing policy message to the sending node" (Office Action, p. 4):

on exchanged messages. See also, [0203-0206], fig. 6.); returning the routing policy to the sending node (McCanne, [0009-0011], application level control is applied to transferred data. Nodes forward the routing messages after they routing policy is computed at the application lcvel. Scc also, [0041-[0049].);

[0022] As can be seen, the Office appears to rely on paragraphs 9-11 and 41-49 of McCanne for allegedly teaching "sending" a "routing policy" to a "sending node" after "receiving a message" and "generating . . . a routing policy" as recited in claim 1. In relevant part, McCanne, paragraphs 9 through 11, are shown here to show the limitations of this reference:

[0009] . . . the overlay protocol uses "native" Internet protocols to route information, according to overlay routing tables, between otherwise disjoint and isolated multicast clouds . . . The . . . [devices] are configured according to bandwidth and security policies, and perform application-level multicast distribution . . . using overlay routing. The result is an overlay multicast network that is effectively managed according to traffic policies defined locally at each NAP.

[0010] The present invention allows application-level control to be applied to the transferred data. . . . The invention exploits application-level activity to control adaptation. For example, in a videoconference, cues from the audio channel, or from the dispositions of the user interfaces at the clients,

can be used to decide to dedicate more of the traffic class' bandwidth allocation to the current speaker.

[0011] An end-user client application can attach to the overlay network using either unicast or multicast communication between it and a MediaBridge [device] on the overlay. Thus, a web page can have a simple "point and click" hyperlink to initiate reception of a multicast audio/video production.

[0023] As can be seen, and contrary to the assertion by the Office, this portion of McCanne fails to teach or suggest either creating a "policy" after receiving a "message" at a node or sending a policy (or policy message) to a "sending node." Merely "routing information" as taught in McCanne is not equivalent to sending a policy as recited in claim 1.

[0024] In relevant part, McCanne, paragraphs 42 through 49, are shown here (with emphasis added) to show the limitations of this reference:

"[0042] This application is principally concerned with the routing components of the OMN [overlay multicast network] architecture and the relationship among the different subsystems . . .

"[0044] The network model assumed by an overlay network is a collection of isolated . . . regions of native multicast connectivity. Overlay routers are deployed across this arrangement of multicast clouds and peer with each other either via unicast or multicast UDP/IP to form a network of application-aware multicast forwarding agents. . . .

"[0045] Even though the OMN framework operates at the application layer, overlay routers must compute what amounts to network-level routes to determine how to **flood multicast flows across . . . the appropriate region of the overlay network . . .** routing occurs at two layers, the network layer and the application layer . . . application-level knowledge can be integrated into the **forwarding process to transform packet flows** at points of administrative discontinuity.

"[0046] In this two-layer routing model, the network (IP) source and destination addresses are rewritten on each overlay router hop . . . Note that this allows overlay routing **without requiring all routers in the network to be upgraded to recognize and forward a new packet type. . . .** That is, existing multicast routers can remain intact while new overlay

routers are installed at the borders of administrative boundaries, or domains.

"[0048] In contrast to native IP Multicast, the overlay multicast service model transforms packets as necessary in order to **forward application-level flows** in a bandwidth-managed fashion. In this model, an application may inject a flow into the network without concern that it will congest the network . . . In addition, sources must explicitly signal to the network their intention to send and optionally indicate type information describing their traffic. Administrative policies can be configured into the infrastructure. These policies can permit or restrict sources from sending based on rich, application-level policies.

"[0049] . . . hosts use the standard IP Multicast interface to inject data packets into and receive packets from an OMN."

[0025] As can be seen, the discussion of "policies" and "sending" in this lengthy passage of McCanne is in regard to two different functions. As bolded above, packets and "traffic" are "forwarded," "injected" and "sent" into the network. In contrast, the only mention of "policy" or "policies" is in paragraph [0048] which states that "[a]dministrative policies can be configured" into the infrastructure or network. Merely "configuring" something fails to teach or suggest "sending" a policy as recited in claim 1. Further, the "policies" as taught by McCanne merely "permit or restrict" sources from sending traffic or packets. Merely permitting or restricting packets is not equivalent to "sending the routing policy message" as recited in claim 1. The routing policy message of claim 1 includes a "routing policy." One of ordinary skill in the art would readily appreciate that the teachings of McCanne fail to teach the "sending" of routing policy as recited in claim 1. Based on at least this substantive difference, claim 1 is patentably distinguished from McCanne.

[0026] Further, the Office states the following in regard to "incorporating the routing policy into the body of the message" (Office Action, p. 4):

incorporating the routing policy into the body of the message and forwarding the message to the final destination node in the overlay network (McCanne, routers forward messages and compute routes including sources and destinations. See [0044-0046], [0166-0172].).

[0027] As can be seen, the Office appears to rely on paragraphs 44-46 and 166-172 of McCanne for allegedly teaching or suggesting such features. Applicant respectfully disagrees that McCanne does so.

[0028] In relevant part, McCanne, paragraphs 44-46 were shown previously. As can be seen, this passage of McCanne only discusses traffic of packets and fails to refer in any way to policies. In particular, this passage merely teaches “to flood multicast flows [packets] across . . . the overlay network” and to “forward” packets. Thus, this passage of McCanne fails to support the assertion of the Office as to “incorporating . . . [a] routing policy into the body of the message” as recited in claim 1.

[0029] McCanne, paragraphs 164 through 172, is shown here in relevant part (and with emphasis added) to show the limitations of this reference:

“[0164] FIG. 4A shows the case where the receipt of multicast information is initiated by a unicast manner in response to a user’s request. Specifically, destination 102 is a desktop computer operated by a user who is browsing web pages. . . . The web page that the user is currently viewing on the desktop computer is ‘served’ by web server computer 104. Web server 104 stores, and serves, information to other computers, such as destination computer 102, in the form of web page content, hyperlinks (i.e., uniform resource locators or ‘URLs’) and other formats.

“[0165] . . . Preferably, source computer 100 registers its channel with the overlay network so that other MediaBridges and web servers “know” how to associate an overlay channel with the data stream . . . When the user of destination computer 102 chooses to receive the video program, e.g., by clicking on a link . . . **web server 104 transfers information on how to subscribe to the video program** as shown by the path 106 . . .

"[0166] Web server 104 returns the identification for MediaBridge computer 108 . . . Web server 104 makes the decision to have destination computer 102 route through MediaBridge computer 108 since web server 104 is provided with information associating computers on the Internet with optimal MediaBridge . . . the optimal MediaBridge computer that a destination computer will use is generally the MediaBridge computer closest in proximity to the destination computer. . . .

"[0167] . . . web server 104 is provided with information on making the association between a destination computer and a MediaBridge computer as . . . where a table in web server 104 associates one or more destination computers with a specific MediaBridge computer . . . a MediaBridge . . . connected on a local area network to web server 104 can be used. Also, the computer making the destination computer and MediaBridge computer association can be remote from web server 104, although the web server requires access to the mapping table to redirect destination computer 102 correctly.

"[0168] . . . web server computer 104 can provides an overlay channel identifier to destination computer 102. The channel identifier is used by the various MediaBridge computers to route the proper content to a destination computer. The channel identifier, or channel address, is 64 bits . . . A channel name is used in the URL and is mapped to a corresponding channel ID as part of the redirection process. . . . additional information can be used either by destination computer 102 to make the subscription request, or can be used by a MediaBridge computer to service subscription requests and to provide efficient multicast relaying. . . . statistics can be kept about the requesting user's computer, geographic location . . . This can be used for demographic analysis, to make predictions about the destination computer's ability to process data at a sufficient bandwidth . . .

"[0169] . . . the destination computer makes a subscription request to MediaBridge computer 108.

"[0171] In FIG. 4B, once destination computer 102 acquires the subscription information from web host 104, destination computer uses the subscription information to send out one or more packets that indicate that MediaBridge computer 108 is to receive the subscribed channel . . . the subscription data includes an identification of the desired channel . . . that is to be received, the destination computer's identification . . . the location of the MediaBridge computer can be different from that shown in FIG. 4B. . . . the MediaBridge computer can exist anywhere on the Internet and need not be part of the LAN that the destination computer is on.

"[0172] Once MediaBridge 108 receives destination computer 102's subscription information, MediaBridge computer 108 uses the **overlay channel ID** to initiate the subscription process. The subscription process is a combination of the native multicasting network architecture and the overlay multicast architecture as described in detail, above. Ultimately, MediaBridge computer 108 sends one or more packets of information in an attempt to subscribe to the appropriate native multicast group. For purposes of the example, we assume that the appropriate native multicast group to which MediaBridge M2 will subscribe for purposes of handling the overlay routing with region 120 needed by the video program from source 100 to destination 102 is designated as "a." The overlay multicast group that is associated with the native multicast is designated as 'A.'"

[0030] As can be seen in paragraph 0164, this passage (paragraphs 166-172) is an example of how to apply the technology discussed in McCanne. Thus, the process described by McCanne in paragraphs 0164 through 0172 must be read in context with the rest of the passages of McCanne and must be read with the understanding that the rest of McCanne cannot be used to bolster the deficiencies of paragraphs 0164 through 0172 because this passage is merely a further example of how to apply the technology described by McCanne.

[0031] As can be seen in paragraph 0165, a "source computer" merely **registers** its channel with the overlay network, presumably in advance of any data traffic between a source computer and destination computer. Registering a "channel" is not equivalent to a "policy" as recited in claim 1 and "registering" is not equivalent to "incorporating" a "policy" into "the body of the message" as also recited in claim 1.

[0032] Further, without giving an indication of timing or coordination with the "registering," McCanne merely teaches "clicking on a link" to have a "web server transfer . . . information on how to subscribe to the video program." Presumably, the "registering" occurs before "clicking" a link, both taught in paragraph 0165. Claim 1 has been amended to clarify and recite that the "incorporating of the policy" occurs "after

identifying a final destination" "by the sending node." McCanne, paragraphs 0164 through 0172, even if read in view of the rest of McCanne, fails to describe such sequence of actions as recited in claim 1.

[0033] In addition, McCanne, paragraphs 0164 through 0172, completely fails to discuss, teach or suggest a "routing policy" and in particular fails to teach or suggest "incorporating . . . [a] routing policy into the body of the message" as recited in claim 1. Further, claim 1 recites that "the routing policy comprises instructions for . . . redirecting messages." Merely "registering" with another node, as taught by McCanne, is not equivalent to a "routing policy" as recited in claim 1.

[0034] Registering a "channel" is also not equivalent to "**forwarding** by the sending node the message" (with the routing policy) to a "final destination node . . . based on the instructions" as recited in claim 1. The Office fails to particularly address "forwarding" of the "message" recited in claim 1. The Office, as seen above at p. 4 of the Office Action, lumps the "forwarding" into the "incorporating" when citing to paragraphs 44-46 and 166-172. Applicant respectfully asserts that the Office fails to particularly point out which portion of McCanne is equated with this feature of claim 1. Without more, and as can be seen in the paragraphs of McCanne shown above, Applicant asserts that McCanne fails to teach or suggest the "forwarding" as recited in claim 1, especially as taken in context with the other features of claim 1.

[0035] Thus, contrary to the assertion by the Office, these portions of McCanne (paragraphs 44-46 and 166-172) fail to teach or suggest either creating a "policy" after receiving a "message" at a node or sending a policy (or policy message) to a "sending node." Merely "routing information" or clicking a link as taught in these portions of

McCanne is not equivalent to "incorporating" a policy "into . . . [a] body of" a message as recited in claim 1. Further, merely "routing" or "registering" as taught by McCanne is not equivalent to "forwarding by the sending node the message to the final destination . . . based on the instructions [of the routing policy]" as recited in claim 1.

[0036] In short, as to citing to McCanne, paragraphs 44-46 and 166-172, the Office appears to be (1) improperly taking features of claim 1 out of context and (2) improperly equating features taught by McCanne with the features recited in claim 1. Based upon the distinctions between McCanne, paragraphs 44-46 and 164-172, Applicant respectfully asserts that McCanne fails to render obvious "incorporating by the sending node the routing policy into the body of the message" as recited in claim 1. Further, McCanne also fails to render obvious "forwarding" of the "message" as recited in claim 1. Consequently, based on at least these substantive differences between paragraphs 44-465 and 164-172 and claim 1, this claim is patentably distinguished from McCanne.

[0037] The Office also attempts to cite to McCanne for teaching or suggesting a "message comprising a header and a body" by referring to **packets** with headers. The Office states the following in the Office Action, p. 4:

McCanne discloses generating a routing policy for a sending node, wherein the routing policy comprises instructions for redirecting messages as described above. The routing policy of McCanne is generated and comprises instructions based on the header and the overlay header as described in at least [0203-0206] and fig. 6.

[0038] In relevant part, McCanne, paragraphs 203 through 206, are shown here (with emphasis added) to show the limitations of this reference as to "headers" of a message at an "application level" as recited in claim 1:

"[0203] FIG. 6 illustrates details of header and address processing in the present invention.

"[0204] In FIG. 6, content source 202 sends information in the form of **packets**. Packet . . . includes an IP header . . . having a destination field and source field. . . . The packet data is contained in a UDP format 'payload' . . . When MediaBridge computer M1 received the packet, it changes the destination and source indications to M2 and M1, respectively. Additionally, an **overlay header** is inserted between the IP header and the payload [**in each packet**]. This packet is shown at 210. The overlay channel indication is "A" in the overlay header, which is also in UDP format.

"[0205] Packet 210 is received by MediaBridge computer M2. M2 is part of a native multicast group and so is able to distribute the packet via native multicast over the native multicast channel 'a.' . . . MediaBridges such as M5 which haven't joined native multicast group 'a' do not receive packet 212. MediaBridge M4 uses the overlay channel designation 'A' to send the packet to client R1 after stripping off the overlay header 'A' so that the packet appears to R1 as a standard packet. . . .

"[0206] Additional routing of the packet is performed by M3 by the use of a second native multicasting domain 222 using native multicast address 'b.' M3 uses native multicast group 'b' by specifying the destination of packet 220 . . . as 'b.' Thus, multiple different native multicast groups can be used to distribute the same overlay channel . . ."

[0039] As can be seen, this passage of McCanne addresses headers of "packets," not "messages" as recited in claim 1. Applicant respectfully asserts that equating "packets" as taught by McCanne with a "message" as recited in claim 1 is improper. Consequently, based on this additional substantive distinction, claim 1 is patentably distinguished from McCanne.

[0040] In conclusion as to claim 1, McCanne does not teach or suggest all of the features of this claim. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn for at least the reasons presented herein.

Dependent Claims 2, 4, 9 and 11-14

[0041] Claims 2, 4, 9 and 11-14 ultimately depend from independent claim 1. As discussed and shown above, claim 1 is allowable over the cited document, McCanne. Therefore, claims 2, 4, 9 and 11-14 are also allowable over the cited document of record for at least their dependency from an allowable base claim. These claims may also be allowable for the additional features that each recites.

Claims 25-28, 31, 33 and 35-38

[0042] Independent claims 25 and 31 recite features which are substantive similar to those recited in claim 1. Without needlessly repeating the discussion above as to McCanne vis-à-vis claim 1, Applicant asserts that McCanne likewise fails to teach or suggest each and every feature of claims 25 and 31. In particular, McCanne fails to teach or suggest at least "incorporating the routing policy into the body of the routing policy message" and "returning the routing policy message" to the sending node as recited in substance in each of claims 25 and 31.

[0043] In addition, claim 31 has been newly amended using features formerly recited in claim 33 directed to "determining from the message whether the sending node has routing policy instructions derived from the body of the message" and "returning a routing policy message which includes the routing policy" to a "sending node" **when** it is determined that "the sending node does not have routing policy instructions derived from the body of the message." Applicant respectfully asserts that McCanne wholly fails to teach or suggest such claim feature, especially as to the "determining."

[0044] The Office states the following in regard to such features (Office Action, p. 8):

McCanne does not expressly

disclose wherein the messaging module is further configured to determine from the message if the sending node does not have routing policy instructions derived from the body of the message, and wherein the policy manager is configured to return the routing policy to the sending node if it is determined that the sending node does not have routing policy instructions derived from the body of the message, however the routing nodes of McCanne forward routing messages between each other in order to route messages. It would have been obvious to one of ordinary skill in the art at the time of the invention to use basic error checking, such as making sure there was routing policy data contained in the messages forwarded from the routing nodes, and if not, indicating this in a return routing message.

[0045] Applicant respectfully asserts that a mere teaching “routing messages between” nodes “in order to route messages” as asserted in the Office Action, is not equivalent to such features as newly amended to and recited in claim 31. One of ordinary skill in the art would not equate “forwarding” or “routing” a message with “determining” from a “message” whether a node has “routing policy instructions” which are “derived from the body of the message” as recited in claim 31. Further, claim 31 recites “returning” a “routing policy” according to the determination. Consequently, Applicant respectfully asserts that claim 31 is additionally allowable over McCanne based on these distinguishing features.

[0046] Claims 26-28, 33 and 35-38 are allowable over the cited document of record for at least their dependency from an allowable base claim. These claims may also be allowable for the additional features that each recites.

Conclusion

[0047] Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the Examiner is urged to contact the undersigned representative for the Applicant before issuing a subsequent Action.

Respectfully Submitted,

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